



Environmental health aspects of drinking water-borne outbreak due to karst flooding: Case study

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Abstract:

Climate change may increase the incidence of waterborne diseases due to extreme rainfall events, and consequent microbiological contamination of the water source and supply. As a result of the complexity of the pathways from the surface to the consumer, it is difficult to detect an association between rainfall and human disease. The water supply of a Hungarian city, Miskolc (174,000 inhabitant), is mainly based on karstic water, a vulnerable underground water body. A large amount of precipitation fell on the catchment area of the karstic water source, causing an unusually strong karstic water flow and flooding, and subsequent microbiological contamination. The presence of several potential sources of contamination in the protective zone of the karstic water source should be emphasized. The water supplier was unprepared to treat the risk of waterborne outbreak caused by an extreme weather event. Public health intervention and hygienic measures were taken in line with epidemiological actions, focusing on the protection of consumers by providing safe drinking water. The contamination was identified, and measures were taken for risk reduction and prevention. This case study underlines the increasing importance of preparedness for extreme water events in order to protect the karstic water sources and to avoid waterborne outbreaks.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Extreme Weather Event, Food/Water Quality

Extreme Weather Event: Flooding

Food/Water Quality: Pathogen

Geographic Feature:

resource focuses on specific type of geography

Freshwater

Geographic Location:

resource focuses on specific location

Climate Change and Human Health Literature Portal

Non-United States

Non-United States: Europe

European Region/Country: European Country

Other European Country : Hungary

Health Impact: ☒

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Foodborne/Waterborne Disease

Foodborne/Waterborne Disease: Campylobacteriosis, Cryptosporidiosis, Giardiasis

Foodborne/Waterborne Disease (other): Escherichia coli

Intervention: ☒

strategy to prepare for or reduce the impact of climate change on health

A focus of content

Mitigation/Adaptation: ☒

mitigation or adaptation strategy is a focus of resource

Adaptation

Resource Type: ☒

format or standard characteristic of resource

Research Article

Timescale: ☒

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment: ☒

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content